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COMMISSIONER MARC SPITZER **COMMISSIONER** MIKE GLEASON COMMISSIONER

JEFF HATCH-MILLER **CHAIRMAN** WILLIAM A. MUNDELL

KRISTIN K. MAYES COMMISSIONER

IN THE MATTER OF QWEST CORPORATION'S FILING OF RENEWED PRICE REGULATION PLAN.

IN THE MATTER OF THE INVESTIGATION OF THE COST OF TELECOMMUNICATIONS ACCESS.

Arizona Corporation Commission ** KETED

JAN 1 2 2005

DOCKETED BY ME

DOCKET NO. T-01051B-03-0454

DOCKET NO. T-00000D-00-0672

NOTICE OF FILING

The Residential Utility Consumer Office ("RUCO") hereby provides notice of filing the Surrebuttal Testimonies of Marylee Diaz Cortez and William A. Rigsby; and the Redacted Surrebuttal Testimony of Dr. Ben Johnson in the above-referenced matter.

RESPECTFULLY SUBMITTED this 12th day of January, 2005.

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Scott S. Wakefield **Chief Counsel**

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1	AN ORIGINAL AND FIFTEEN COPIES of the foregoing filed this 12 th day	
2	of January, 2005 with:	
3	Docket Control Arizona Corporation Commission	
4	1200 West Washington	
5	Phoenix, Arizona 85007	
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IN THE MATTER OF QWEST CORPORATION'S FILING OF RENEWED PRICE REGULATION PLAN

DOCKET NO. T-01051B-03-0454

and

IN THE MATTER OF THE INVESTIGATION OF THE COST OF TELECOMMUNICATIONS ACCESS

DOCKET NO. T-00000D-00-0672

SURREBUTTAL TESTIMONY

OF

MARYLEE DIAZ-CORTEZ

ON BEHALF OF THE

RESIDENTIAL UTILITY CONSUMER OFFICE

JANUARY 12, 2005

Surrebuttal Testimony of Marylee Diaz Cortez Docket Nos. T-01051B-03-0454 and T-00000D-00-0672

15

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1	INTRO	DDUCTION
2	Q.	Please state your name for the record.
3	Α.	My name is Marylee Diaz Cortez.
4		
5	Q.	Have you previously filed testimony in this docket?
6	Α.	Yes. I filed direct testimony in this docket on November 18, 2004.
7		
8	Q.	What is the purpose of your surrebuttal testimony?
9	A.	The purpose of my surrebuttal testimony is to respond to various
10		arguments and opinions Qwest witnesses have set forth in their rebuttal
11		testimony.
12		
13	Q.	What issues will you discuss in your surrebuttal testimony?
14 _	A.	In my surrebuttal testimony I will respond to Qwest's rebuttal arguments
15		concerning the following RUCO recommended adjustments:
16	٠.	* Rate Base Adjustment #1 - Accumulated Depreciation
17		* Rate Base Adjustment #2 - Capitalization of Software
18		* Rate Base Adjustment #3 - Construction Work in Progress
19		* Rate Base Adjustment #4 - Accumulated Depreciation - Station
20		Apparatus
21		* Rate Base Adjustment #5 - Pension Asset
22		* Rate Base Adjustment #6 - Postretirement Benefits
23		* Fair Value Rate Base

1 depreciation expense twice, once in the rates that were in place during the 2 test year and again through the rates and tariffs set in this docket. 3 4 Rate Base Adjustment #2 -Capitalization of Software 5 Have you reviewed the Company's rebuttal comments regarding your Q. 6 Rate Base Adjustment #2 and Operating Adjustment #4 - Capitalization 7 and Amortization of Software? 8 A. Yes. 9 10 Q. Are RUCO and Qwest in agreement on the appropriate adjustment for the 11 capitalization of software costs? Yes. Qwest has revised its requested rate base and operating income to 12 A. 13 reflect the same adjustment as recommended in my direct testimony. 14 There are some small discrepancies in amounts of the two adjustments however the adjustments are materially and conceptually the same. The 15 16 Company's revisions are shown on Company Exhibit PEG-R4. 17 18 Rate Base Adjustment #3 - CWIP 19 Q. Please discuss Qwest's rebuttal comments regarding Rate Base 20 Adjustment #3 and Operating Adjustment #7. 21 Qwest continues to argue that its CWIP balances should be included in Α. 22 rate base with a credit to operating revenues to avoid double counting

AFUDC (interest) accruals with the proposed rate base recovery

value of the asset will decrease each year as the asset depreciates, and therefore the recovery of the return will decrease each year. This is inaccurate. Yes, the net book value of the asset will decrease each year on the Company's books, but unless there is a rate case each year, the rate base value will remain unchanged. This continues to allow the Company to earn on the undepreciated value of the asset.

Q. Do you continue to oppose the Company's "revenue offset" method of accounting for CWIP?

Α.

Yes.

Commission should depart from its typical CWIP ratemaking treatment and has failed to prove its argument that the typical Commission treatment does not afford the Company an opportunity to recover its full cost.

The Company has presented no compelling reason why the

Rate Base Adjustment #4 - Accumulated Depreciation - Station Apparatus

 Q. Please discuss Qwest's rebuttal arguments concerning your Rate Base

Adjustment #4 - Accumulated Depreciation Station Apparatus.

A. The Company claims in its rebuttal testimony that the accumulated depreciation balance associated with the Station Apparatus account *is* included in the test year rate base balance, and thus RUCO's adjustment is unnecessary.

- Q. In light of the Company's claims have you revisited this issue?
- A. Yes. I reviewed Schedule B-4 of the Company's application which clearly shows a balance in plant account 2311 Station Apparatus of \$32.9 million. I also reviewed the Company's response to RUCO data request 4-6 which provided a schedule of test year accumulated depreciation balances for each plant account. There is no accumulated depreciation in account 2311 Station Apparatus. Thus, based on the data provided to me by the Company, it continues to appear that the Station Apparatus accumulated depreciation balance has been omitted from the Company's rate base, and that RUCO's adjustment is necessary.

Rate Base Adjustment #5 - Pension Asset

- Q. Please discuss the Company's rebuttal arguments regarding RUCO Rate
 Base Adjustment #5 Pension Asset.
- A. The Company's rebuttal claims that the RUCO Pension Asset adjustment is a "red herring" and should be rejected.
- Q. What is the Company's basis for this conclusion?
- A. It is not entirely clear how the Company reached this conclusion. The Company's argument centers around the assumption that RUCO has excluded the Pension Asset from rate base because the Company has failed to recognize \$511 million in Other Liabilities on its balance sheet in

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- rate base. Qwest further claims that no weight can be given the Company's balance sheet (Schedule E-1) in determining rate base.
- 3 Q. Do you agree with the Company's comments?
 - A. No. While I do point out in direct testimony that recognition of a Pension Asset of over \$97 million in rate base without a corresponding analysis of the Other Liabilities account is inherently biased, this is not the only reason for my recommendation to exclude the Pension Asset balance from rate base.

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Q. What other reasons did you have for your recommendation?

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A.

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base of \$1,647 million and a test year capital structure of \$1,653 million.

As previously discussed in my direct testimony, Qwest has a test year rate

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asset is not possible since the \$1,653 million in actual Arizona capital

Thus, Qwest's claim of investor supplied capital for an Arizona pension

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investment is sufficient only to support Qwest's test year rate base (which does not include a pension asset). I also note that the Commission

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denied Qwest's rate base treatment of the Pension Asset in a prior case.

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These points remain unrebutted in the Company's testimony.

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Rate Base Adjustment #6 - Postretirement Benefits

- Q. Have you reviewed the Company's rebuttal comments to your Rate Base

 Adjustment #6 and Operating Adjustment #5 Postretirement Benefits?
- A. Yes. It appears RUCO's position is consistent with the Company's position on the treatment of the Post Retirement Benefits. In its rebuttal testimony, the Company updates its adjustment to reflect the most recent estimate of the accumulated postretirement benefit obligation, and to correct and error in the rate base portion of this adjustment. These Company acknowledged corrections and updates accomplish the same purpose as RUCO Rate Base Adjustment #7 and Operating Adjustment #5.

Fair Value Rate Base

- Q. Please discuss the Company's rebuttal comments regarding fair value rate base.
- A. The Company argues in its rebuttal testimony that Arizona law requires that the Commission make a finding of fair value rate base in the context of setting rates.
- Q. Do your agree with this position?
- 21 A. Yes. The Company is correct. Arizona law requires a finding of fair value 22 rate base. However, I do not agree that the Commission must apply an

original cost rate of return to that fair value rate base, as argued by the Company.

- Q. How does the Commission calculate fair value rate base and fair value rate of return?
- A. In determining a utility's fair value rate base (FVRB), the Commission averages the utility's original cost rate base (OCRB) and its reconstruction cost new depreciated rate base (RCND). The Commission then determines the revenue requirement by multiplying the OCRB by the original cost cost of capital. The fair value rate of return is equal to the revenue requirement divided by FVRB.
- Q. How does the Commission methodology differ from what Qwest has proposed?
- A. The error in the Company's calculation is its application of the original cost rate of return to the FVRB, thereby deriving a larger than warranted revenue requirement. This methodology is incorrect. When the correct rate of return is applied to the OCRB, RCND, or FVRB the revenue requirement remains constant. The Company's proposed methodology derives a higher revenue requirement through the use of the FVRB.

Q. Why is this incorrect?

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Α.

The revenue requirement that a utility is entitled an opportunity to recover through rates is in large part dependant on two factors: the value of its rate base and its cost of capital. Both factors need to be stated on the same basis in order to generate fair and reasonable rates. When an original cost rate base and original cost of capital basis are used these two factors are appropriately matched. The original cost rate base does not consider inflation, as does the RCND rate base. However, the original cost of capital utilized in a rate case does consider inflation in both the cost of debt analysis (i.e. as an interest rate component) and the cost of equity analysis (i.e. in the risk component). Thus, when an original cost rate base is multiplied by an original cost of capital the inflation element is present in the resultant revenue requirement as a component of the cost of capital. If an original cost rate base is replaced with a FVRB rate base the inflation factor will be double counted in the revenue requirement calculation. This double count results because both the RCND rate base (which represents 50% of the FVRB) and the original cost of capital include an inflation factor. When multiplied together in the revenue requirement calculation, the inflation factor will be compounded and result in a double count, which will overstate the revenue requirement.

OPERATING INCOME

Operating Adjustment #2 - Projected Changes in Test Year Revenues

- Q. Have you reviewed Qwest's rebuttal comments concerning your Operating

 Adjustment #2 Projected Changes in Test Year Revenues?
- A. Yes. Qwest denies that its proposed revenue decrease adjustment is based on projections, and further claims that the \$44.7 million decrease in revenues it has proposed is "known and measurable".

Q. Do you agree that the proforma decrease in revenue the Company has reflected in its filing is "known and measurable"?

- A. No. The proforma decrease in revenues is based on a number of assumptions, which include the assumption that a change in certain independent variables will have a one-to-one impact on the dependent variable, which in Qwest's proposed adjustment is its revenue. Qwest relies on regression analyses to support this assumption. Yet, none of the Company's regression analyses show a one-to-one correlation between the independent variable and Qwest revenue. Despite the absence of a one-to-one correlation, the Company's projected revenue decrease adjustment relies on the existence of a one-to-one relationship.
- Q. How did Qwest characterize this adjustment in its original filing?
- A. Qwest characterized the proposed proforma revenue decreases as "Forecast Amounts" in its filing.

Operating Adjustment #8 - Property Tax Expense

- Q. Please discuss Qwest's rebuttal comments pertaining to Operating
 Adjustment #8 Property Taxes.
 - A. Qwest's claims that the property tax rate and the full cash value used in RUCO's property tax calculation are incorrect.
 - Q. Do you agree that your calculation does not render an accurate full cash value?
 - A. No. My calculation utilizes the formula ADOR uses to calculate telephone property taxes, which is defined under Arizona Revised Statute §42-14403. The formula is based primarily on the book value of Qwest's Arizona property. By utilizing the test year adjusted net plant in my calculation I have captured only the property tax related to regulated Arizona jurisdictional plant. This is the only portion of the property tax expense that ACC jurisdictional customers should be responsible for. Qwest has suggested that I should have used the full cash value as determined by ADOR on its 2004 notice of valuation, which has not been adjusted to reflect solely the regulated ACC jurisdictional property.
 - Q. Had you utilized the amount suggested by Qwest, how would that differ from your calculation using test year adjusted net plant?
 - A. The full cash value shown on ADOR's 2004 notice of valuation is \$2,583,351,359. That amount would have to be jurisdictionalized and

then the ACC jurisdictional amount multiplied by the 25% assessment This methodology would yield a property tax expense of approximately \$1.2 million more than my calculation does using the net adjusted test year values and a property tax expense that is \$8 million less

- Please respond to the Company's comments regarding the property tax
- The Company claims the 2004 average state property tax utilized in my calculation is incorrect, and that I should have used the actual 2003 tax
- How did you obtain the 2004 average state property tax rate that you used
- I spoke with an ADOR employee in the telephone property tax division and was provided with the 12.18% 2004 rate. ADOR applies the 2004 tax rate to the 2003 net plant values to determine the 2004 property tax assessment. My calculations employ this same methodology.
- Even if you were to modify your calculations based on the Company's rebuttal arguments would the resultant property tax expense be materially different that than in your original calculation?
- 23 No. A.

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Operating Adjustment #9 - Incentive Compensation

- Q. Have you reviewed the Company's rebuttal comments regarding

 Operating Adjustment #9 Incentive Compensation?
- A. Yes. In response to my direct testimony stating that ratepayers should not be required to pay higher rates to fund rewards for poor operating results, the Company opines that I have not shown that the test year incentive compensation costs are unreasonable business expenses.
- Q. Please respond.

A. It appears the Company did not understand the rationale for my incentive compensation adjustment. By definition the incentive compensation rewards are unreasonable expenses when the Company operated at a loss, yet rewarded its employees anyway. Further, the awards themselves exacerbated the Company's losses and contributed to the need for even higher rate increases. Under these circumstances the incurrence of these expenses was unreasonable.

OTHER AGREED ON ADJUSTMENTS

- Q. In addition to those already specifically address in your surrebuttal testimony, are Qwest and RUCO in agreement on any other adjustments?
- A. Yes. Qwest and RUCO agree on: RUCO Rate Base Adjustment #6 and Operating Adjustment #1/Qwest PFA-01 and RUCO Operating Adjustment #3/Qwest PFN-12.

Surrebuttal Testimony of Marylee Diaz Cortez Docket Nos. T-01051B-0454 and T-00000D-00-0672

1 Q. Does this conclude your surrebuttal testimony?

2 A. Yes.

IN THE MATTER OF QWEST CORPORATION'S FILING OF RENEWED PRICE REGULATION PLAN

DOCKET NO. T-01051B-03-0454

and

IN THE MATTER OF THE INVESTIGATION OF THE COST OF TELECOMMUNICATIONS ACCESS

DOCKET NO. T-00000D-00-0672

SURREBUTTAL TESTIMONY

OF

WILLIAM A. RIGSBY

ON BEHALF OF THE
RESIDENTIAL UTILITY CONSUMER OFFICE

JANUARY 12, 2005

Surrebuttal Testimony of William A. Rigsby Docket No. T-01051B-03-0454 Docket No. T-00000D-00-0672
INTRODUCTION1
SUMMARY OF QWEST'S REBUTTAL TESTIMONY2
COST OF EQUITY CAPITAL3

INTRODUCTION

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- 2 | Q. Please state your name, occupation, and business address.
- A. My name is William A. Rigsby. I am a Public Utilities Analyst V employed by the Residential Utility Consumer Office ("RUCO") located at 1110 W. Washington, Suite 220, Phoenix, Arizona 85007.
- 7 | Q. Please state the purpose of your testimony.
 - A. The purpose of my testimony is to respond to Qwest Corporation's ("Qwest" or "Company") rebuttal testimony on RUCO's recommended rate of return on invested capital for the Company's telecommunications operations in the state of Arizona.
 - Q. Have you filed any prior testimony in this case on behalf of RUCO?
 - A. Yes, I filed direct testimony with the Arizona Corporation Commission ("ACC" or "Commission") on November 18, 2004. My direct testimony addressed the cost of capital issues that were raised in Qwest's application for a permanent rate increase for certain regulated services available to ratepayers under a revised price cap plan ("Application").
 - Q. How is your surrebuttal testimony organized?
- A. My surrebuttal testimony contains three parts: the introduction that I have just presented, a summary of Qwest's rebuttal testimony and a section on

the cost of equity capital in which I will defend my recommended cost of capital.

SUMMARY OF QWEST'S REBUTTAL TESTIMONY

- Q. Have you reviewed the rebuttal testimony of Company witness Peter C. Cummings?
- A. Yes, I have reviewed Mr. Cummings's rebuttal testimony, which was filed with the Commission on December 20, 2004.

- Q. Please summarize the Company's rebuttal testimony that addresses the cost of capital issues in this case.
- A. Mr. Cummings's rebuttal testimony provides a comparison of his recommendations with the cost of capital recommendations of ACC Staff witnesses Joel M. Reiker and Alejandro Ramirez, and the cost of capital recommendations presented in my direct testimony. Mr. Cummings points out in his testimony that there are no arguments or disagreements among the witnesses on either the Company's proposed capital structure, or cost of debt. Mr. Cummings rebuttal testimony then concentrates on the main point of contention in this case which is a cost of equity capital that takes Qwest's level of debt into consideration. The remainder of Mr. Cummings' testimony criticizes the approaches employed by Mr. Reiker and myself to arrive at our final recommended costs of common equity of 14.6 percent and 11.5 percent respectively, and argues why his 21.4 percent cost of

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equity capital, derived by using a levered beta in the capital asset pricing model ("CAPM"), should be adopted by the Commission.

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COST OF EQUITY CAPITAL

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- Q. Have you made any changes to your recommended 11.5 percent cost of common equity based on information presented in Mr. Cummings' rebuttal testimony?
- 7 8
- A. No, I have not.

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Q. Do you believe that the Commission should adopt Mr. Cummings's recommended 21.4 percent cost of equity capital for Qwest?

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A.

the 21.5 percent cost of equity, produced by the theoretical 2.15 beta calculated by Mr. Cummings, is realistic when companies with similar betas are compared with Qwest. Mr. Cummings has accepted the results

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of his CAPM analysis with a levered beta without question. In short, he

No. As I stated on page 54 of my direct testimony, I do not believe that

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has failed to put any type of sanity check on the results produced by the

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Q. Have you performed such a sanity check?

CAPM model.

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A. Yes, I have. Schedule WAR-10 contains a list of publicly traded

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companies followed by <u>The Value Line Investment Survey</u> ("Value Line"), which have betas that range from 2.00 to 2.50. I will use the information

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presented in the schedule¹ to explain why I believe Mr. Cummings' recommended 21.4 percent cost of equity capital is not reasonable.

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Q. Please describe Schedule WAR-10.

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Schedule WAR-10 lists thirty-three publicly traded companies that have betas that range from 2.00 to 2.50. Their combined average beta is 2.15 (the same beta calculated for Qwest by Mr. Cummings). Approximately seventy-three percent of the companies are traded on the technology heavy NASDAQ exchange as opposed to the NYSE. companies, with the exception of three, are unregulated and operate in a competitive environment. The three regulated entities include E*Trade Financial, an on-line Internet brokerage service that is subject to certain state and federal securities regulations, and two firms in the diversified natural gas industry; Williams Companies (which spun off its telecommunications subsidiary in April 2001) and Dynegy whose interstate natural gas transportation operations are subject to FERC oversight. The most dominant industry represented in the list is the semiconductor industry. A total of eight semiconductor firms such as LSI Logic Corp. and Atmel Corp., had betas that ranged from 2.0 to 2.25.

¹ Data was compiled from <u>The Value Line Investment Survey</u>'s December 24, 2004 Summary & Index publication.

- Q. Were any of the companies in your compilation telecommunicationsservice providers such as Qwest?
 - A. Only one unregulated company, American Tower, is exhibited in Schedule WAR-10. None of the other companies that comprise Value Line's telecommunications service industry segment, including the RBOC's, had betas that fell in the 2.00 to 2.50 range.

- Q. Please describe American Tower.
- A. According to Value Line, American Tower operates approximately 15,000 wireless communications and broadcast towers that are primarily leased to wireless providers of personal communications services. The Company has a beta of 2.0 and has a capital structure comprised of approximately 66.0 percent debt and 34.0 percent equity. Value Line has estimated a long-term (2007-09) return of common equity of 2.50 percent for American Tower.

- Q. What was the average capital structure of these firms?
- A. The average capital structure for the companies listed on Schedule WAR10 was roughly 38.0 percent debt and 62.0 percent common equity as
 compared to Qwest's 75.0 percent debt and 25.0 percent common equity.

 However the level of equity among the listed companies ranged from a
 high of 99.97 for Applied Micro, an unregulated semiconductor firm with a

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on common equity by operating period were as follows:

	2004	<u>2005</u>	2007-09
High	17.0%	24.0%	23.5%
Low	1.50%	1.50%	2.50%
Average	8.16%	9.09%	12.93%

- 1 Q. Which companies had the high and low estimated returns on common equity for the long-term (2007-09) period?
 - A. The high estimated return on common equity of 23.5 percent was for Avanex Corp., a manufacturer of fiber optic products with a beta of 2.35 and a capital structure of 10.0 percent debt and 90.0 percent equity. The low estimate of 2.50 percent was for American Tower, which I described earlier.
 - Q. What other information is provided in Schedule WAR-10
 - A. The remainder of Schedule WAR-10 contains Value Line's estimates for returns on common equity for the various industries (i.e. advertising, semiconductor etc.) that are listed in the schedule.

Q. What is the main point of the information contained in Schedule WAR-10?
A. The main point is that the majority of companies operating in competitive environments, with betas ranging from 2.00 to 2.50, that are listed in schedule WAR-10 have nothing in common with Qwest. Qwest is not in the semiconductor industry, the air transport industry or for that matter, the Internet industry such as E*Trade Financial or Priceline.com. Nor is Qwest a manufacturer of telecommunications equipment such as Avanex, Corp. Qwest is, for all practical purposes, a regulated phone company, which, based on the testimony provided by RUCO witness Ben Johnson, is not facing the level of competitive pressure claimed in its filing.

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- Q. Does Mr. Cummings's rebuttal testimony offer any new or compelling reasons why your recommended 8.73 percent rate of return on invested capital does not meet the *Bluefield Water Works* and *Hope Natural Gas* decisions that established the basic criteria for establishing a fair and reasonable rate of return?
- A. No. Mr. Cummings does not offer any new or compelling reasons as to why my 8.73 percent return on invested capital fails to meet the standard established in those landmark decisions.
- 10 Q. Does your silence on any of the issues or positions addressed in the
 11 rebuttal testimony of the Company's witnesses constitute acceptance?
- 12 A. No, it does not.
- 14 Q. Does this conclude your surrebuttal testimony?
- 15 A. Yes, it does.

OWEST CORPORATION DOCKET NO. T-01051B-03-0454 DOCKET NO. T-00000D-00-0672 TABLE OF CONTENTS TO SCHEDULES WAR

SCHEDULE #

WAR - 10

PUBLICLY TRADED COMPANIES WITH BETAS OF 2.00 TO 2.50

QWEST CORPORATION TEST YEAR ENDED DECEMBER 31, 2003 PUBLICLY TRADED COMPANIES WITH BETAS OF 2.00 TO 2.50

(N) VALUE LINE	FOR INDUSTRY 2007-09	9.50%	16.00%	12.50%	25.50%	14.00%	6.50%	13.00%	12.50%	12.50%	23.00%	12.50%	14.00%	12.50%	14.00%	6.50%	2300%	%00% V 00%	14 00%	14.00%	6.50%	14.00%	20.00%	15.50%	16.00%	14.00%	20.00%	12.50%	6.50%	0,000	13.00%	8.00.2	15.27%	
(M) VALUE LINE	FOR INDUSTRY 2005	11 50%	15.00%	8020	19.50%	8.00%	6.00%	13.00%	6.50%	6.50%	50.00%	9.50%	%00.6	6.50%	%00.6	4.50%	16.00%	24.00%	3.30%	%00 6	800%	9.00%	NMF	16.00%	15.00%	800.6	NAF	8.20%	4.50%	%00.9	11.00%	11.00%	10.39%	
(L) VALUE LINE	FOR INDUSTRY 2004	41 00%	14.50%	800.6	16.50%	8.50%	5.00%	12.50%	6.50%	2.00%	19.50%	%00'6	8.50%	2.00%	8.20%	1.50%	16.50%	25.00%	3.00%	8.50% 8.50%	6.00%	8.50%	NMF	16.50%	14.50%	8.50%	MM	%00 6	1.50%	2.00%	11.50%	11.50%	9.34%	
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6)	VALUE LINE ESTIMATED ROE 2005	7000 04	7 50%	16.00%	13.00%	2.50%	2.00%	NME	NAF	8.00%	MMF	14 00%	1.50%	2.00%	1.50%	4.50%	NMF	NML	NMI	13.50%	6.00%	11.50%	NMN	3 00%	13.50%	8.50%	NMF	24.00%	4.00%	NMF	805.6	NMN	%60.6	
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IN THE MATTER OF QWEST CORPORATION'S FILING OF RENEWED PRICE REGULATION PLAN

DOCKET NO. T-01051B-03-0454

and

IN THE MATTER OF THE INVESTIGATION OF THE COST OF TELECOMMUNICATIONS ACCESS

DOCKET NO. T-00000D-00-0672

SURREBUTTAL TESTIMONY

OF

DR. BEN JOHNSON (REDACTED)

ON BEHALF OF THE

RESIDENTIAL UTILITY CONSUMER OFFICE

JANUARY 12, 2005

1		TESTIMONY
2		OF BEN JOHNSON, PH.D.
3		On Behalf of
4		THE STATE OF ARIZONA
5		RESIDENTIAL UTILITY CONSUMER OFFICE
6		Before the
7		ARIZONA CORPORATION COMMISSION
8		
9		Docket No. T-01051B-03-0454
10	***	Docket No. T-00000D-00-0672
11	-	
12	Intro	duction
13		
14	Q.	Would you please state your name and address?
15	A.	Ben Johnson, 2252 Killearn Center Boulevard, Tallahassee, Florida 32309.
16		
17	Q.	What is your purpose in submitting this testimony?
18	A.	In this surrebuttal testimony I will be responding to certain portions of the rebuttal testimony of
19		Qwest witnesses Harry Shooshan and David Teitzel. I will also be commenting on positions
20		taken by certain intervenor witnesses concerning issues discussed in my direct testimony. The
21		fact that I do not discuss other portions of the testimony of these witnesses, or the positions
22		taken by other witnesses, should not be construed as agreement with such undiscussed
23		testimony

Surrebuttal Testimony of Ben Johnson, Ph.D.
On Behalf of the RUCO, Docket No's. T-01051B-03-0454 and T-00000D-00-0672

Q. Would you please explain how your surrebuttal testimony is organized, and briefly summarize its major elements?

Yes. Following this introduction, my testimony has two major sections. The first section contains a response to rebuttal arguments proffered by Qwest witnesses Shooshan and Teitzel. I respond to the arguments made concerning appropriate measures of competition and the degree to which intramodal competition can justify Qwest's petition for greater pricing flexibility under its Arizona Price Regulation Plan (the current Plan). I will also address cost recovery as it pertains to Qwest's need for greater pricing flexibility. In addition, I will respond to Qwest's critiques of RUCO's proposed Price Regulation Plan (the recommended Plan) and the role that productivity, if any, should play in such a Plan.

The second section contains a response to arguments proffered by Cox Arizona Telcom, L.L.C. (Cox), MCI, Inc. (MCI), The United States Department of Defense (DoD), and the Utilities Division (Staff) of the Arizona Corporation Commission (Commission). As in my response to Qwest's rebuttal arguments, in this section I will examine some of these parties' positions on the status of competition in Arizona markets as well as their recommendations for current Plan modifications. Finally, I will critique some of these parties' positions on the appropriate use of the Arizona Universal Service Fund (AUSF) and switched access rate reductions.

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- Q. In its direct testimony, did Qwest attribute much significance to the issue of competition, as it pertained to the Company's proposed revisions to its current Plan?
- A. Yes. Mr. Teitzel described competition as the impetus behind the proposed revisions.

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It is imperative that the implications of the dynamic competitive environment in Arizona be recognized in the manner in which Qwest's rates are established and in relaxing regulatory guidelines where competition is now thriving. [Teitzel Direct, p. ii]

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- 12 Q. Did the Company attempt to describe the competitive landscape in Arizona?
- 13 A. Yes. In addition to describing it as "dynamic" in the previous quote, Mr. Teitzel devotes over
 14 fifty pages of his direct testimony to describing the activities and successes of carriers he
 15 considers Qwest's competitors. After reading this discussion, one is left with the impression
 16 that Qwest is facing significant competitive pressures across its Arizona serving area.

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- Q. Did you present an alternate view of the competitive landscape in your direct testimony?
- A. Yes. I painted a picture that was not so rosy. Namely, high barriers to entry still exist for
 carriers wishing to enter the market. This is evidenced by the relatively high market shares still
 enjoyed by Qwest across much of its territory, and the high 4-firm concentration ratios and
 Herfindahl-Hirschmann Indices (HHIs) seen in Qwest wire centers. Further, market
 abandonment by some major carriers and potential reduction in UNE availability going forward

may slow or reverse the trend toward increased competition.

Q. Have any of the other intervenors painted a similar picture?

A. Yes. Cox witness Lafferty also disputes Qwest's view of the competitive landscape.

 Qwest continues to serve the majority of customers in the state with recent trends suggesting the spread of competition is decreasing. ... Recent regulatory and legal decisions and other trends suggest competition for Qwest's basic wireline services will decrease -- not increase -- in the near future. [Lafferty Direct, p. 3]

Time Warner Telecom of Arizona LLC witness Gates takes a similar position.

Qwest has overstated the extent to which it is subject to competition in Arizona. ... Qwest maintains dominance in Arizona. In addition, Qwest continues to benefit from its position as the monopoly provider of special access services, which allows it to realize monopoly profits and to control the strength and viability of its competitors. [Gates Direct, p. 3]

Staff witness Fimbres also takes a similar position.

 While some wire centers have all four forms of competition (resale, UNE-L, UNE-P & facilities bypass), the competitive gains in the nearly 9 year window since the 96 Telecom Act was passed highlight slow progress with little to support that acceleration is imminent. ... While the tariffs illustrate opportunities for broad residence and business local exchange service competition, the available evidence indicates that most of the 10 CLECs identified by Qwest are focused on providing business services. Only Cox appears to have a major emphasis on residence service. Only Cox appears to be committed to wide-spread, residential, facilities-based competition, the only form of local exchange

On Behalf of the RUCO, Docket No's. T-01051B-03-0454 and T-00000D-00-0672 1 service provisioning that allows for full local exchange service 2 differentiation. [Fimbres Direct, pp. 11, 12] 3 How did Qwest respond to your competitive picture? 4 O. Owest's witnesses criticized the manner in which I measure competition and the manner in 5 A. 6 which I dealt with intramodal competition. 7 8 Q. Would you please outline Owest's first criticism? 9 Yes. Mr. Teitzel states in his rebuttal testimony: A. 10 11 The term "effective competition" does not appear in any Arizona rule or statute that is relevant to this docket. ... The term "effective 12 competition" is not only missing from the Commission's rules, it is a term 13 that may have multiple meanings. One such meaning is that effective 14 competition is where there are no barriers of entry and the costs of 15. entry are not excessive. That describes the current state of the 16 telephony market in Arizona. [Teitzel Rebuttal, p. 67] 17 18 19 Even if the term "effective competition" doesn't appear in any Arizona rule or statute, that 20 doesn't preclude this concept from being useful. If the term "effective competition" suffers from having multiple meanings, that problem is even more severe with respect to the word 21 "competition" standing alone. All real-world markets involve some degree of competition, even 22 those where a single provider serves 100% of the customers and no other providers are 23 capable of providing the service or product in question (a pure monopoly), because alternatives 24

Surrebuttal Testimony of Ben Johnson, Ph.D.

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faces vigorous "competition" from numerous firms selling bottled watered.

always exist. For instance, a water utility fits the classic definition of a pure monopolist, yet it

As I stated in my direct testimony,

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Although economists recognize that full competition remains an unrealized ideal in our economy, the high levels of efficiency and equity achieved under effective competition have long been a primary justification of America's free enterprise or market-directed system.

[Johnson Direct, p. 79]

I find it interesting that Mr. Teitzel attempts to invalidate my use of the term "effective competition" while Mr. Shooshan employs that same term in his examination of various competitive measures. [Shooshan Rebuttal, pp. 8, 24]

In an effort to avoid any potential ambiguities due to the fact that effective competition "may have multiple meanings" I very clearly defined my use of that term in my direct testimony. Namely, "Effective competition is present when a market is free of substantial barriers to entry and exit and when no firm or consortium of firms has enough market power to set or strongly influence market prices." [Id., p. 108] This is more stringent than Mr. Tietzel's interpretation that "effective competition is where there are no barriers of entry and the costs of entry are not excessive," in that the definition I offer accounts for market power, while Mr. Teitzel's does not. Section four of my direct testimony demonstrates why I believe that effective competition does not currently exist in telephony markets in Arizona, regardless of whether the Commission uses Mr. Teitzel's looser definition, or my more stringent one.

In his rebuttal testimony, Mr. Shooshan disagrees with my use of concentration ratios to gauge competition.

First, it is important to consider the introduction of measurement bias that arises from utilization of number listings (as opposed to actual usage) in measuring a concentration index. ... Using number listings or lines as the appropriate measure of actual and potential *productive* capacity—the truly economically relevant measure for gauging competition—clearly understates true competitive effectiveness. [Shooshan Rebuttal, p. 10]

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From this testimony, I gather Mr. Shooshan disputes my emphasis on lines, and would prefer more focus on usage (e.g. focusing on minutes of use or other volume-sensitive measures of market share). As well, it appears he may be suggesting that a measure of the carrying capacity of a network is more important than the volume of actual traffic or revenue generating services that are carried over that network.

I disagree on both counts. In that view, if a new fiber optic network can theoretically handle as much traffic as Qwest's existing network, that carrier should not be viewed as coequal with Qwest, merely because it has installed productive capacity. If it has few customers and a largely empty network, this carrier's presence may be strong evidence for the existence of barriers to entry that make it difficult for newcomers to convince customers to change carriers. The huge volumes of empty capacity may be a better predictor of future bankruptcies than a measure of current competition. In this regard, I agree with the direct testimony Qwest witness Ziegler where he admonishes the Commission to recognize the "realities of the competitive marketplace." [Ziegler Direct, p. 16] The empirical data that best captures the extent to which competitors are successfully entering the market and winning customers (market shares, 4-firm concentration ratios, and HHIs) all confirm that the "realities of the competitive marketplace" are different in different parts of the state. Qwest's market power has

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substantially diminished in some Arizona markets, but in other areas Qwest's market power remains strong. Add to this fact the concern that competition may diminish in the future, due to changes in the federal regulatory environment, and there is every reason to be concerned that Qwest's is asking for too much freedom, too soon. Finally, if Mr. Shooshan truly believed that "the elasticity of supply is the best economic summary measure of competitive effectiveness," I find it interesting that not a single Qwest witness has offered empirical measures of the elasticity of supply, in an effort to bolster the Company's contention that it is facing effective competition. [Shooshan Rebuttal, p. 10] Would you please outline Qwest's second critique? Q. Yes. Mr. Shooshan responds to my contention that wireline and wireless services are not A. competitive alternatives. He states first: As long as the services are alike in "substance" (that is, they permit the same primary function to be performed), they are comparable for determining if there is effective competition. In this case, it is clear that wireless and wireline service are enough alike in their primary function to be considered substitutes. [Id., p. 24] He states second: To determine which products or services are in the same market, it is not necessary for all customers to view the services as completely interchangeable. Rather, services are competitive substitutes if they "have the ability-actual or potential-to take significant amounts of business away from each other." [Id., p. 25]

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Regarding Mr. Shooshan's first point, I disagree with the notion that being alike in "substance" is sufficient for two items to be classified as close substitutes. Among other problems with this approach, it fails to consider the possibility that substitution may be asymmetric (A is freely substituted for B but B isn't typically substituted for A). As well, it fails to consider the possibility that two alternatives may perform the same substantive function, yet one may be far more costly than the other. In that case, the more costly alternative doesn't provide effective competition for the less costly alternative. To illustrate these complications, consider again the situation where a water utility "competes" with bottled water. The convenience and purity of the bottled alternative leads some consumers to purchase this alternative, thereby reducing their consumption of tap water. But, due to cost differences, it is hardly realistic to suggest that intense competition in the bottled water market is sufficient to diminish the water utility's monopoly power.

I would grant that wireline and wireless phones enable the user to place phone calls. They are alike in this manner. However, in my direct testimony, I offered nine ways in which wireline and wireless are quite different. [Johnson Direct, pp. 178-179] Additionally, I have offered evidence that most consumers seem to believe that they are not close substitutes. Among other things, this is proven by the fact that so many consumers add wireless service without simultaneously dropping their wireline service. [Id., p. 179] Aside from introducing the "substance" concept, Mr. Shooshan has not offered any empirical "substance" to his rejection of my conclusions about wireless service.

I addressed Mr. Shooshan's second point in my direct testimony. Recall I mentioned that "wireless services do not constrain Qwest's ability to exploit its monopoly power in

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traditional wireline markets." [Id.] I have shown that wireless service has not *actually* taken much business away from Qwest and any *potential* ability to do so is so speculative that it does not justify immediate action to adopt the sweeping revisions Qwest has proposed for its current Plan.

While Qwest did not provide much numerical evidence in its direct testimonies to support its wireless substitutability claims, one exception is the data cited by Mr. Teitzel in his rebuttal testimony. Interestingly, this data serves to validate my position on this issue rather than Owest's. Recall that in my direct testimony I stated:

For many customers, these services more closely meet the definition of complementary goods, rather than substitutes. Most people purchase both services, using their mobile phone in situations where it will function best and their conventional phone where it will function best. The very fact that so many people keep both phones (even if it requires them to double their expenditure on phone service) tends to prove that these services should not primarily be viewed as competitive alternatives. [Johnson Direct, p. 137]

In my direct testimony, I recognized that approximately 6% of wireless customers have abandoned their wireline service entirely. [Teitzel Rebuttal, p. 69] Mr. Teitzel goes on to reference a Yankee Group study that shows 64% of U.S. households have both a wireless and a wireline phone. [Id., p. 70] This dynamic – in which significantly more people have both phones than have substituted one for the other – reasonably supports the conclusion that these two services are primarily complements, rather than substitutes.

Finally, Mr. Teitzel critiques my assessment of cable telephony and VoIP as being "in their infancy." [Johnson Direct, p. 179] He mentions that Cox – a cable telephony provider – is

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a "very robust telecommunications competitor" and that VoIP is a "viable telecommunications alternative." [Teitzel Rebuttal, p. 71] I am unsure how closely Mr. Teitzel read my direct testimony because I refer to these technologies as "potentially much more direct substitutes for traditional telephony" and I include Cox lines in my HHI calculations. [Johnson Direct, p. 179] I recognize the potential for increased substitution by these technologies, but even after giving full weight to lines provided by the most significant local provider (Cox), I still concluded that only some portions of Qwest's serving area had enough competition to justify the pricing flexibility the Company is seeking.

Q. What type of pricing flexibility is the Company seeking?

A. As I stated in my direct testimony,

The current Plan includes a number of provisions that limit the extent to which the Company can increase rates for services in each of the current Plan's three baskets. The "inflation minus productivity" indexing mechanism, hard service caps, and rate element cap in Basket 1 are all examples of existing provisions that limit the Company's pricing—flexibility. These specific provisions and others would be modified in the proposed Plan, thereby providing greater opportunities to charge higher prices to all the Categories. [Id., p. 19]

Additionally, Qwest has proposed nearly complete pricing freedom for services in its proposed Flexibly-priced Competitive Services basket. And its proposed "competitive zone" approach would allow it to move services from the Basic basket into the Flexibly-priced basket in certain portions of its Arizona serving area.

Having already stated that your analysis of competition in Arizona indicated little 1 O. support for the flexibility sought in Qwest's proposed Plan, do you support an 2 3 alternative Plan? Yes. I urge the Commission to utilize RUCO's recommended Plan to regulate Qwest services 4 A. 5 going forward. 6 7 Did Owest argue against the utilization of the recommended Plan in its rebuttal Q. 8 testimony? Yes. Mr. Teitzel and Mr. Shooshan addressed perceived flaws in the recommended Plan. The 9 A. 10 witnesses critique the assignment of services to baskets as well as the retention of the productivity offset in the basket-wide cap on Basic Services. Regarding basket assignment, 11 Mr. Shooshan argued that the recommended Plan was flawed in that it (1) doesn't keep 12 wholesale services and retail services in separate baskets, (2) is contrary to spirit of price cap 13 regulation, and (3) is too complex and cumbersome. Mr. Teitzel similarly argues that the 14 15 recommended Plan "is perhaps interesting as an academic exercise but is impossible to effectuate." [Teitzel Rebuttal, p. 68] 16 Regarding the productivity offset, Mr. Shooshan contends (1) that it is not consistent 17 with evolution of price cap regulation, (2) that other states have abandoned it, and (3) that it is 18 19 wrong to use nationwide data in calculating it. 20 21

A.

Q. Would you like to address Qwest's points pertaining to basket assignment under the recommended Plan?

Yes. I would first like to point out that Qwest has not questioned the validity of using competitive intensity to assign services. In fact, with respect to this underlying principle, RUCO's recommended Plan is very similar to Qwest's competitive zone approach. As a matter of pure logic, it is obviously appropriate to tailor the degree of pricing flexibility to with the intensity of the competitive pressures that Qwest faces. Because I believe that this fundamental logic applies to all price capped services, I don't think it is necessary to keep wholesale and retail services in separate baskets. What is important is to make sure that the most competitive services aren't commingled with the least competitive services. Mr. Shooshan simply states that separation of wholesale and retail services represents a "progressive approach," but he doesn't provide any support for this opinion. [Shooshan Rebuttal, p. 6] If he is concerned that competitive retail services might be placed in the same basket with monopoly wholesale services, I would certainly share that concern. If it is necessary to create additional baskets to avoid this possibility, I would not necessarily object to doing that.

While I am unsure what Mr. Shooshan means by the "spirit of price cap regulation," perhaps I touched on this subject in my direct testimony, where I stated:

The specific goal of price cap regulation is to eliminate, or at least weaken, the linkage between cost and rates, but there is no evidence that policy makers have abandoned their focus on the broad public interest, or that they are no longer concerned about the traditional goals of public utility regulation. For example, in developing and refining its

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system of price cap regulation, the FCC apparently still viewed the results of effective competition as an appropriate benchmark for price cap regulation. [Johnson Direct, p. 83]

I do not see any way in which the recommended Plan abandons any of these principles. It is my view that assigning services to baskets according to competitive intensity will advance the public interest because price controls will be loosened most for services and areas with the most intense competition and controls will be only moderately relaxed, or maintained, for services and areas with less intensive competition.

Regarding Qwest's concerns with the complexity of service assignment under the recommended Plan, I conceded in my direct testimony that RUCO's approach was "somewhat more complex" than Qwest's competitive zone approach. [Id., p. 171] Qwest claims that instead of being *somewhat* more complex, RUCO's approach is *much* more complex. [Shooshan Rebuttal, p. 7] I strongly dispute this difference in degree. But, even if a more precise alignment of services and geographic areas *were* much more complex, that added complexity is fully justified if the Commission wants to grant Qwest as much pricing flexibility as possible, while making certain that the public interest is protected.

The appropriate assignment of services to baskets is crucial in price regulation. This assignment process dictates the degree of pricing flexibility that Qwest will be afforded in each case. If this assignment process is overly simplistic, Qwest may be granted an excessive degree of pricing flexibility in markets where it faces relatively little competitive pressure, and thus it will be able to exploit its residual market power to the detriment of its customers and the public generally. In my direct testimony, I specifically cautioned the Commission concerning this risk

1 due to the excessive simplicity of Qwest's proposed approach. [Johnson Direct, p. 171] The current standards for classifying services as competitive can be found in 2 3 Commission Rule R14-2-1108B. 4 5 The petition for competitive classification shall set forth the conditions 6 within the relevant market that demonstrate that the telecommunications 7 service is competitive, providing, at a minimum, the following 8 information: 9 10 1. A description of the general economic conditions that exist which make the relevant market for the service one that is 11 12 competitive: The number of alternative providers of the service; 2. 13 The estimated market share held by each alternative provider of 3. 14 the service: 15 The names and addresses of any alternative providers of the 16 4. service that are also affiliates of the telecommunications 17 company, as defined in R14-2-801: 18 The ability of alternative providers to make functionally 5. 19 20 equivalent or substitute services readily available at competitive rates, terms, and conditions; and 21 Other indicators of market power, which may include growth 6. 22 and shifts in market share, ease of entry and exit, and any 23 24 affiliation between and among alternative providers of the 25 service(s). [R14-2-1108B] 26 The approach to basket assignment found in the recommended Plan is consistent with the 27 procedure that Owest must currently undertake to classify its services as competitive - taking 28 29 into account the number of competitors, market shares, and other measures of market power. There is nothing about the current competitive classification mechanism that is unduly complex 30 31 or burdensome.

To the extent service assignments under RUCO's recommended Plan would be more complex, that is primarily due to the fact that three categories would be used in evaluating the degree of competition, rather than two categories (competitive or not), and because Qwest would have the option of requesting different classification of the same service in different geographic markets. Admittedly, the latter option does add to the overall complexity of the system, but that same complexity is inherent in Qwest's own competitive zone proposal.

Furthermore, I would note that the same types of empirical evidence which are envisioned in the existing Rule (e.g. market shares) are often available for individual wire centers or exchanges.

Finally, it is not clear whether any "services that are deregulated today" would be "reregulated when they are passed through Dr. Johnson's screen." At most, perhaps some services that have been placed into the most flexible pricing category should more appropriately be placed in the middle category, where Qwest would still enjoy a very substantial degree of pricing freedom. Such a reclassification would not be unreasonable, and in fact is contemplated under the current Commission rules:

Any telecommunications service classified by the Commission as competitive may subsequently be reclassified as noncompetitive if the Commission determines that reclassification would protect the public interest. Notice and hearing would be required prior to any reclassification. The burden of proof would be on the party seeking reclassification. [R14-2-1108H]

1	Q.	Dr. Johnson, in your direct testimony you summarized some competition statistics				
2		gathered from the June 30, 2004 edition of FCC Local Competition Report (FCC				
3		LCR). What does the December 2004 update of the FCC LCR indicate about the				
4		overall level of competition in Arizona?				
5	A. *	According to the most recent FCC LCR, the overall CLEC market share in Arizona increased				
6		from 21.8% as of December 2003 to 25.2% as of June 30, 2004. [Table 6, FCC LCR] This				
7		is roughly five times the CLEC market share of 5% reported by the FCC in June 2000 [Table				
8		7, FCC LCR]. This recent surge in CLEC market presence is consistent with the recent trend				
9	-	nationally; the nationwide CLEC market share more than quadrupled from December 1999 to				
10		June 2004 (from 4% to 18%). Table 1 below shows how Arizona compares to the other				
11		Qwest states and the nationwide totals, as of June 2004. These data suggest that competition in				
12		Arizona is similar to the level of competition that is present in Minnesota, Nebraska and Utah.				
13		Competition in the remaining Qwest states appears to be substantially less well developed.				
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Table 1 End-User Switched Access Lines in States Served by Qwest (As of June 30, 2004 per FCC LCR)

State	ILECs	CLECs	Total	CLEC Share
Arizona	2,415,432	814,194	3,229,626	25.2%
Colorado	2,439,132	498,583	2,937,715	17.0%
Idaho	666,914	47,398	714,312	6.6%
Iowa	1,232,364	199,115	1,431,479	13.9%
Minnesota	2,377,827	604,152	2,981,979	20.3%
Montana	482,548	19,204	501,752	3.8%
Nebraska	736,257	205,560	941,817	21.8%
New Mexico	894,345	76,469	970,814	7.9%
North Dakota	265,881	22,502	288,383	7.8%
Oregon	1,743,918	267,121	2,011,039	13.3%
South Dakota	271,682	n/a	n/a	n/a
Utah _	940,678	288,009	1,228,687	23.4%
Washington	3,276,000	494,375	3,770,375	13.1%
Wyoming	235,360	n/a	n/a	n/a
Total Qwest	17,978,338	3,536,682	21,007,978	16.8%
Total Qwest w/o AZ	15,562,906	2,722,488	17,778,352	15.3%
Nationwide	148,103,506	31,983,229	180,086,735	17.8%

1	Q.	Has the provisioning composition of the roughly 25% CLEC market share in Arizona
2		changed with the update?
3	. A.	No it has not. Table 10 of the FCC LCR shows that 50% of the CLEC lines in Arizona are
4		purely facilities-based (using loops that are self-provided) and 33% are UNE-based (including
5		both UNE-P and UNE-L). This is about the same relative composition reported 6 months
6		earlier.
7		
8	Q.	How does this competitive mix compare to other Qwest states?
9	A.	Table 2 below provides this comparison. With respect to facilities-based competition, Arizona
10		represents over 34% of facilities based lines in Qwest's 14 state territory.
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Table 2 **CLEC-Reported End-User Switched Access Lines By State** (As of June 30, 2004 per FCC LCR)

State	CLEC-Owned (%)	UNEs (%)	Resold Lines (%)
Arizona	50	33	17
Colorado	31	47	22
Idaho	n/a	55	n/a
Iowa	20	72	8
Minnesota	28	51	21
Mississippi	4	74	22
Montana	77	n/a	n/a
Nebraska	66 _	21	14
North Dakota	34	n/a	n/a
Oregon	13	71	16
South Dakota	n/a	n/a	n/a
Utah	24	49	27
Washington	30	52	18
Wyoming	n/a	n/a	n/a
Total Qwest	33	48	18
Total w/o AZ	28	52	19
Nationwide	23	61	16

On Bel	nalf of the RUCO, Docket No's. T-01051B-03-0454 and T-00000D-00-0672
Q.	Can market share data be useful to the Commission in deciding how much pricing
	flexibility to grant Qwest through revisions to its Plan?
A.	Yes. There are at least two ways in which market share data can be useful to the Commission.

First, this data is useful in evaluating the extent and degree to which competitors are succeeding in their efforts to enter Qwest's markets. Recall, in my direct testimony, I stated:

Market dominance and the ability to exercise market power – not the mere presence of alternative suppliers – are the key issues in deciding whether effective competition has emerged or is emerging. Thus, a logical first step in evaluating the extent of competition is to evaluate relative market shares. If the incumbent continues to enjoy an overwhelmingly large market share relative to the new entrants, it would not be appropriate to adopt regulatory policies which assume that competition is effective. Unless and until the incumbent's market power is greatly eroded, the continued regulatory oversight provided by state commissions and the FCC provides valuable protection for consumers and the public interest generally. [Johnson Direct, pp. 112]

Based upon market share data, I reached the following conclusions regarding wireline competition in Arizona.

In general, CLEC market shares in Arizona are

- higher for services to businesses than services to residences;
- higher for services in metropolitan markets than in rural areas;
 - are held almost entirely by carriers that use their own facilities at

least in part.

A.

Q. What is the second useful aspect of these market share data?

These data not only reflect the extent to which the Arizona telecommunications market is competitive, it also examines the underlying composition of that competition. For instance, Arizona CLECs utilize UNEs in providing **Proprietary Proprietary** of their lines; they fully rely on their own facilities for **Proprietary Proprietary** of their lines, and they rely on pure resale for just **Proprietary Proprietary** of their lines.

This data is significant, since these different methods of operation have varying implications for the likely outcome if Qwest were given additional pricing freedom. Simply stated, facilities-based carriers face more substantial barriers to entry and exit than carriers that strictly rely on resale of Qwest's services and/or network elements. Facilities-based CLECs are more independent of Qwest, but they make a larger capital investment; the added risks associated with these sunk investments may encourage facilities-based CLECs to be "price followers" who are reluctant to "rock the boat." Conversely, CLECs that rely on UNE-P and pure resale will encounter lower barriers to entry and exit, but they are less capable of acting independently from Qwest (e.g., they cannot easily compete by adopting and promoting a newer technology).

Another important factor to consider in light of the fact that Arizona CLECs utilize UNE switching to provide **Proprietary Proprietary** of their lines is the ongoing advocacy by Qwest at the federal level:

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Qwest and the other RBOCs have been actively lobbying to restrict the availability of UNEs and to make it more difficult, or impossible, for CLECs to rely exclusively on this form of entry. [Johnson Direct, pp. 122]

Depending upon the content of these revised rules, much of the competitive activity that is currently observed, based upon rental of UNEs, may disappear. While this may result in more facilities-based competition, the latter form of competition is clearly more difficult and time consuming to achieve; thus the overall level of CLEC market penetration may decline below current levels, and it may remain at relatively low levels for many years into the future. [Johnson Direct, pp. 124]

Many CLECs are dependent on the use of unbundled portions of Qwest's network in its Arizona serving area. The existing degree of "successful entry" is not necessarily indicative of what the future holds, particularly if the unbundling requirements are loosened, due to the advocacy efforts of Qwest and other ILECs.

A.

Q. How should the Commission interpret market share data?

All of these statistics indicate that, almost without regard to where in Qwest's serving territory you focus your attention, the market for residential local exchange service remains "highly concentrated." Recall that in my direct testimony, I provided the Commission with some benchmarks that it could use in evaluating the degree of pricing flexibility which should be associated with specific services and geographic markets. In an effort to provide some benchmarks for judging market conditions, I mentioned that I would anticipate that if the ILEC's market share remains in excess of 67%, it most likely should only receive moderate

- 13

pricing flexibility. Similarly, if the service is provided in a market with a 4-firm concentration ratio in excess of 90% and an HHI in excess of 4,000, most likely it would not be appropriate to grant more than moderate pricing flexibility to the ILEC.

An ILEC market share between 67% and 33%, a 4-firm concentration ratio between 90% and 75%, and/or an HHI between 4,000 and 1,800 would be indicative of a somewhat more intensely competitive market—one where regulatory controls could reasonably be relaxed to a greater degree, but significant regulatory protections should remain in place.

Finally, I suggested it would be reasonable to grant total pricing flexibility (with essentially no continuing regulatory protection from monopoly power) if the dominant carrier has a market share of 33% or lower, and the market exhibits a 4-firm concentration ratio that is lower than 75%, or an HHI of 1,800 or less.

Applying these benchmarks to the data received via discovery, we note that Qwest's share of the residential local exchange service market exceeds 67% in all but two of its wire centers. Similarly, the 4-firm concentration ratio in each Qwest wire center exceeds 90%. And finally, the residential HHIs in each Qwest wire center exceed 4,000 in all but the same two wire centers. These data are consistent with the general conclusion that CLEC market shares tend to be higher for services in metropolitan markets than in rural areas. Hence, it is not surprising that the two wire centers with residential market shares below 67% and residential HHIs below 4,000 are **Proprietary Proprietary**.

As I discuss more thoroughly in the following section, the evidence indicates that it might be appropriate for the Commission to keep most of residential local exchange service in the most tightly regulated service category (e.g., the Moderate Basket in RUCO's

recommended plan). The only exception would be the aforementioned wire centers.

Q. In your direct testimony you provided some illustrative examples of how the Commission might go about assigning specific services to baskets. Mr. Shooshan implies that under RUCO's recommended Plan the assignment process will be too complex. Can you provide some illustrative examples that clarify your recommendations, and demonstrate that it is not impossibly complex?

8 A.

A. Yes. Schedules 1 and 2 attached to this testimony contain Qwest market share data and 4-firm concentration ratios, as well as HHIs by Qwest wire center, for residential local exchange service and business local exchange service, respectively. These data were provided as Schedules 4 and 5 in my direct testimony. To illustrate the assignment process, I have added recommendations for assigning these services by wire center to the three baskets in RUCO's

Q. Would you please present your analysis of residential local exchange service?

16 A. Yes. Recall there are three attributes that can be used to assign a service to a basket under the 17 RUCO's recommended Plan – geography, customer type, and service-specific characteristics.

recommended Plan in the final column of the schedules I present here.

Schedule 1 takes into consideration all three attributes. Residential local exchange services provide local calling capability, as well as providing access to a variety of other services, including switched toll services, custom calling services and caller ID. By looking at market data for residential customers separately from business customers, we are able to consider competitive differences related to customer type. By looking at market data for each

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individual wire center we are able to consider competitive differences within distinct geographic areas.

By and large, the data in Schedule 1 suggests that competition is more extensive in highly urbanized areas than in outlying areas; this is not unexpected, considering differences in the concentration of customers and other factors. For example, the relatively dense Phoenix-Main wire center has an HHI of **Proprietary Proprietary**. In contrast, the Whitlow wire center has a much lower density, and an HHI of **Proprietary

Proprietary**.

By closely examining the data in Schedule 1, however, it is clear that other geographic factors are at work, in addition to differences in density. As well, it becomes clear that residential competition is still relatively weak in comparison with business competition. In fact, all but two of Qwest's wire centers exhibit residential HHIs that exceed the 4,000 benchmark that I suggested as a potential benchmark for delineating between the Moderate Pricing Flexibility basket and the High Pricing Flexibility basket.

Given current market conditions and uncertainties concerning future trends in competition, RUCO recommends that residential local exchange services be placed in the Moderate Pricing Flexibility basket within all wire centers except for Phoenix - Main and Tucson - Main. Within these two wire centers, residential local services should initially be placed in the High Pricing Flexibility basket. Once experience has been gained with the impact of this reassignment, it would be reasonable to consider a request for movement into the Total Pricing Flexibility basket. I will explain the rational for this as I describe the next illustrative example.

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Q. Would you please present your analysis of business local exchange service?

A. Yes. Recall that my Schedule 2, attached to this testimony, contains competitive data for business local exchange service in each Qwest wire center. In the **Proprietary

Proprietary**, Qwest currently holds a market share less than 67% (but greater than 33%) of the business local exchange market. Relying on this same data, this wire center has a 4-firm concentration ratio less than 75% and an HHI less than 1,800. In my direct testimony, I mentioned that a service that exhibited an incumbent market share less 33%, a 4-firm concentration ratio less than 75%, and an HHI less than 1,800 would be indicative of a Total Pricing Flexibility service. Accordingly, this wire center meets the second and third benchmark for placement in the Total Pricing Flexibility basket, but not the first benchmark (i.e., Qwest market share). Given this evidence, it would be reasonable to grant Qwest substantial additional pricing flexibility with regard to business local exchange services in this geographic area, by placing these services in either the High Pricing Flexibility basket, or the Total Pricing Flexibility basket.

- Q. Up to this point in your discussion, all business local exchange services have been lumped together. Is it feasible to account for the differences in the various business services?
- A. Yes. However, the Commission would need to make some judgment calls, because the data provided during discovery is relatively weak in this regard. As I mentioned on page 175 of my direct testimony

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there are most likely differences in the intensity of competition for various business services, including 1FB, PBX trunks, and Centrex. In general, I would anticipate greater competitive penetration for PBX trunk service than for 1FB service, and greater competition for Centrex than for PBX trunk service. However, due to data limitations I was not able to compute separate HHIs for each of these services. [Johnson Direct, p. 175]

1 2

Given the available evidence, it would be reasonable, for example, for the Commission to place PBX Trunks and Centrex service in the **Proprietary

Proprietary** in the Total Pricing Flexibility basket, while placing 1FB service in the High Pricing Flexibility basket.

- Q. How do your illustrative examples compare to the assignment of services to baskets under Owest's proposed Plan?
- A. Recall that the proposed Plan assigns services to three baskets Basic/Essential Non-competitive Services and Flexibly-priced Competitive Services (Wholesale Services basket is the third basket). Under Qwest's competitive zone proposals, many local exchange services would be assigned to the Flexibly-priced Competitive Services basket, and thus virtually all protection from monopoly power would be eliminated.

The major differences between RUCO's recommend Plan and Qwest's proposal are that RUCO provides a middle basket, which affords more pricing flexibility than the existing plan, but less than total flexibility. As shown on Schedule 2, this middle ground is very important under current market conditions. RUCO recommends assigning business local exchange service in many geographic areas to this middle basket, because competition has

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advanced substantially, but not enough to justify granting total pricing flexibility.

Finally, RUCO recognizes that competition for many of the services used by large businesses is already very robust. Accordingly, RUCO recommends placing these services into the Total Pricing Flexibility basket, which is very similar to the Company's proposed Flexibly-priced Competitive Services basket. If the Commission adopts this recommendation, the Company will have nearly complete freedom to price these services in whatever manner it chooses.

Q. Would you like to address Qwest's points pertaining to the inclusion of a productivity offset (X) under the recommended Plan?

Yes. Mr. Shooshan suggests that the use of an offset is not consistent with the evolution of price cap regulation *because* many state commissions have recently approved Plans devoid of an offset. I cannot speak to the evidentiary record or advocacy context in which the decisions—were made in Iowa, Colorado and Minnesota to eliminate use of an offset. However, simply citing to decisions in other jurisdictions is not an appropriate basis for making a decision that could result in a shift of many hundreds of millions of dollars from Arizona customers to Qwest's stockholders for the next 20 years. The evidence I presented in my direct testimony demonstrated that the existing 4.2% offset continues to be consistent with annual productivity and input cost savings achieved by the industry from 1986 to the present.

I explained the rationale for adjusting inflation for industry-specific productivity and cost reductions in my direct testimony:

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...price cap regulation generally focuses on industry-wide data, while traditional regulation focuses on carrier-specific data. However, the full impact of this difference is not felt initially. When a price cap system is initially instituted, it typically resembles traditional regulation, since the price cap is usually based upon the existing tariffs, which were derived from carrier-specific data. ...Over time, the two systems will tend to diverge, since the price cap method of regulation normally focuses on industry-wide factors, while traditional regulation focuses on company-specific data (in a rate case). ...

By including a factor for inflation, the firm is allowed to increase its prices to keep pace with inflation. This makes sense, to the extent that a firm's costs can be expected to increase as a result of inflation. However, since costs do not increase by exactly the same amount throughout the economy, due, for example, to industry-specific differences in productivity growth, the formula typically includes a factor (usually referred to as the "X" factor) which attempts to track industry-specific differences. [Id., pp. 84, 85]

Looking at national data, it is clear that ILECs continue to benefit from cost reductions relative to the overall rate of inflation. In other words, an ILEC of ordinary efficiency can still expect to benefit from windfall profits if it is allowed to increase its rates in synch with the national inflation rate, without taking into account the more favorable trends in productivity and input costs being experienced by the telecommunications industry. Costs are not increasing as fast as the overall inflation rate.

In this regard, it is important to focus on national data, rather than exclusively focusing on state-specific or carrier-specific data. While the latter data might suggest a recent diminishment in the long term decline in real telecommunications costs, that data is too narrow to provide an accurate, reliable indication of underlying cost conditions. Furthermore, an

exclusive focus on state-specific or carrier-specific data will tend to reestablish a direct link between Qwest's costs and its rates (albeit after a lag), thereby diluting incentives for increased efficiency and cost minimization.

Because the traditional system of rate base regulation relies upon carrier-specific cost information (albeit after a lag), there is a direct link between management decisions and prices that can weaken the incentive for firms to operate efficiently (e.g., because inefficiencies and excessive costs may be recovered from customers).

With a price cap system, prices are regulated by focusing on the changes in the overall level of costs that the firm faces (input cost inflation), and subtracting the impact of productivity or expected productivity growth as it can generally be expected to impact firms in the industry. The price cap should rise if the prices of a firm's inputs rise, but it should not be linked directly to changes in the specific costs incurred by each individual firm. If the system is tied to industry-wide data, it is feasible to avoid a direct link between management inefficiency and higher prices. Thus, by relying on broad data sets, management will have strong incentives to minimize the prices it pays for its inputs, and strong incentives to increase its productivity as much as possible. Whenever management reduces costs, the benefits will immediately and directly flow to stockholders (since revenues and the price cap remain unchanged). The same can be said about traditional regulation between rate cases; however, when a rate case does occur, efficiency incentives are diluted, because observed cost reductions are eventually passed through to ratepayers. In contrast, the benefit of industry wide declining costs should be passed through to customers. A properly designed price cap formula, which includes an appropriate offset based on industry data will assure strong incentives for efficiency and fair treatment of

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customers. To the extent cost reductions are generic to the industry, they will be reflected in the data that is used in the price cap formula, and the benefits of these cost reductions will be shared with customers.

Thus, a price cap system with an appropriate offset provides stronger, more lasting incentives for management to cut costs and increase efficiency, in comparison with a scenario in which no offset is used, a scenario in which there are frequent rate cases, or a scenario in which the Commission relies on an ever-present threat of rolling back rates if excess profits arise due to a failure to include an offset in the price cap system.

A.

Q. Would you like to address any other points raised in Qwest's rebuttal testimonies?

Yes. Mr. Teitzel, in his rebuttal testimony, critiques the revenue-cost comparisons I included on pages 46 through 63 of my direct testimony. He makes the following statements:

As discussed in Ms. Million's direct testimony, Qwest's revenues are deficient by approximately \$64 million to cover the cost of providing local exchange service in high cost wire centers. This was the basis for Qwest's proposal to establish a competitively-neutral draw from the AUSF to support the provision of local exchange service to high cost areas. [Teitzel Rebuttal, p. 65]

However, the revenue generated by customers in the highest cost wire centers is not sufficient to cover Qwest's costs of providing service to those customers. This fact is the driver of Qwest's AUSF proposal. Essentially, Dr. Johnson is suggesting that the monopoly era system of implicit subsidies should be continued in perpetuity in Arizona. [Id., pp. 66-67]

Mr. Teitzel contends that Qwest's revenues in high cost areas are deficient by \$64 million

based upon an analysis of the cost of providing local exchange service in these areas. While I 1 don't disagree with the premise that it costs more to provide service in some areas relative to 2 others, I strongly dispute the specific method Qwest is using to estimate the magnitude of the 3 alleged shortfall. Recall that I stated the following in my direct testimony: 4 5 Having been active in utility regulation for more than 25 years, I have 6 been a part of numerous proceedings in which subsidy claims are made. 7 I have found that where differences of opinion exist concerning the 8 presence or absence of cross subsidies, the debate almost always 9 centers around a single major point of contention-the appropriate 10 interpretation and treatment of joint and common costs. [Johnson 11 12 Direct, p. 48] 13 Staff witness Regan provided testimony that confirms the crucial importance of the appropriate 14 treatment of joint and common costs in this context: 15 16 Owest would already be incurring the costs of the loops and ports if 17 Owest was "already" providing toll, access and vertical services, so 18 those costs are not "additional" costs of basic local exchange service. 19 However Owest improperly included 100% of these loop and port 20 costs in its claimed basic local TSLRIC. [Regan Direct, p. 16] 21 22 My revenue-cost comparisons show that the problem is not as widespread, or as severe, as 23 Mr. Teitzel contends. Qwest did not provide a substantive response to my quantitative analysis 24 in its rebuttal. 25 With regard to Mr. Teitzel's contention that "the monopoly era system of implicit 26 subsidies should be continued in perpetuity in Arizona" this is simply not true. To the contrary, 27 my revenue-cost comparisons suggest there are significant discrepancies in Qwest's gross profit 28

margins across different geographic markets. While I don't necessarily agree with characterizing these discrepancies as "implicit subsidies" I agree there is reason to be concerned about the magnitude of these discrepancies. Over the long term, these discrepancies may not be sustainable, given the increased level of competition being experienced in urban markets relative to rural markets – as well as the higher level of competition being experienced in business markets where the largest gross margins have historically been achieved. If profit margins continue to erode in these markets, it may be difficult for Qwest to continue to profitably serve low margin customers in high cost markets. As well, there is reason to be concerned that these discrepancies in gross profit margins have a tendency to distort the price signals that are sent to other carriers, by discouraging them from attempting to compete with Qwest in high cost areas.

Not only do I share some of Qwest's concerns about continuation of the status quo, I specifically recommended that, to the extent that Qwest believes it needs changes in the regulatory environment in order to "recover its costs of serving customers in high cost areas," I recommend utilizing a state Universal Service Fund approach similar to the one used in Kansas. [Ziegler Direct, p. 8]

The KCC initially established the Kansas Universal Service Fund as a "revenue neutral" mechanism which replaced a portion of the existing access revenues. It later replaced this system with a forward-looking cost-based mechanism. The KCC recognized that costs per line can vary widely with density and distance from the central office. Therefore, in order to take these factors into account, the KCC decided to target support on the highest cost (i.e., least dense, most distant) areas within each wire center. Wire centers and zones within these wire centers were not given support unless the relevant costs per line exceeded

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125% of the statewide average costs per line. [Johnson Direct, p. 65]

Other Intervenors

- Q. Would you like to address any of the points raised in the direct testimonies of the other intervenors in these proceedings?
- Yes. In particular, I would like to respond to two areas in which other intervenors put forward positions that are contrary to my recommendations suggestions for modifying the current Plan, and suggestions for lowering switched access rates.

- Q. Would you please outline and respond to intervenor positions as they relate to the first issue?
- A. Yes. No other witness has recommended departing from the existing basket structure found in the current Plan. Those that have made suggestions for modifying the current Plan have limited their comments to suggestions for tweaking the existing price caps or the existing reclassification mechanism. I agree the current Plan is basically sound, and it would be better to retain the current Plan than to adopt Qwest's proposed Plan, I believe that now is an appropriate time to rethink the current Plan's basket structure, and to modify that structure, in order to provide Qwest with some additional pricing flexibility on a highly targeted basis, without prematurely removing protection from monopoly power in those markets where Qwest continues to enjoy a substantial degree of market power.

Second, I take issue with Staff's and DoD's proposed price caps. Like Qwest, Staff

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supports eliminating X and replacing it with a revenue cap. Unlike Qwest, Staff proposes to retain a revenue cap on the Competitive Services basket. In responding to Qwest arguments above, I reemphasized why I believe it is appropriate to retain an offset. Neither Qwest nor Staff have presented any substantial evidence that the decades-long pattern of declining real costs in the telecommunications industry has suddenly come to a halt, or that market forces alone are capable of passing through to consumers the benefits of increasing productivity and declining costs, similar to the manner in which these benefits flow to consumers under conditions of effective competition.

I find it puzzling that Staff would paint a rather bleak picture of competition in Arizona, and yet contend that lost productivity due to "line and revenue losses" justify eliminating the offset. [Rowell Direct, p. 13] The effect of eliminating the offset will be to give Qwest an opportunity to earn monopoly profits from services sold in those markets where it faces the weakest competition.

On the other hand, I believe Staff goes too far in the opposite direction (i.e., not granting Qwest sufficient pricing flexibility) when it proposes using a revenue cap in the Competitive Services basket, even with an upward adjustment. [Rowell Direct, p. 12-13] I agree with Qwest's contention that competition is robust for some of its services in portions of its Arizona serving area. [Johnson Direct, p. 176] Given this fact, it can be reasonably expected that market forces alone will force Qwest to pass productivity gains and cost reductions through to consumers in these areas. As a result, I support RUCO's conclusion that the maximum rate provisions in Commission rules A.A.C. R14-2-1109 and A.A.C. R14-2-1110 are sufficient price caps on Competitive Services. I see no reason to impose a revenue cap, nor do I

On Behalf of the RUCO, Docket No's. T-01051B-03-0454 and T-00000D-00-0672 1 anticipate any problem with granting Owest near total pricing flexibility in these specific 2 markets. 3 4 Have any other intervenors proposed modifying the competitive zone approach Owest Q. 5 employs in its proposed Plan? 6 A. Yes. Staff and Cox present their own competitive zone proposals. In one respect their 7 recommendations are consistent with RUCO's recommended Plan: they separately deal with 8 residential and business services. [See, Rowell Direct, p. 42 and Lee Direct, p. 9] 9 In another respect they take a quite different approach: Staff witness Rowell and Cox witness Lafferty argue against the use of Qwest wire centers as the geographical basis for 10 11 competitive zones. Mr. Rowell states: 12 13 The disadvantages of the wire center are that listing information is not 14 available at the wire center level, information on CLECs who use their 15 own network exclusively is not available at the wire center level (but Qwest has provided problematic estimates), information on wireless 16 17 carriers and VOIP providers is not available at the wire center level and 18 customers are not familiar with the concept of a wire center. [Rowell 19 Direct, p. 24] 20 21 Mr. Lafferty states: 22 23 Both customers and competitors must have a clear understanding of the 24 boundaries. Customers think in terms of town, cities, counties and 25 states, so any other definition would be hard for them to grasp. ... Most customers would understand towns or exchanges, but not wire centers. 26 27 [Lafferty Direct, pp. 29-30]

Surrebuttal Testimony of Ben Johnson, Ph.D.

After carefully considering the arguments proffered by Staff and Cox against the use of wire centers as a basis for evaluating competition, I continue to believe it is useful to analyze the data on this basis.

The first, most important advantage of using wire centers is that robust data is readily available for individual wire centers. Mr. Rowell concedes this point.

Certain facts are available at the wire center level. The number of competitors serving customers in a wire center through UNE-L, UNE-P, and resale is known to Qwest. Also the specific number of lines each such competitor is serving in a wire center is known to Qwest. [Rowell Direct, p. 24]

It is exactly this granular, wire center-based line data that I recommend using to identify markets where increased pricing flexibility can appropriately, and safely, be granted (as summarized in my Schedules 1 and 2). Mr. Rowell argues that Cox does "not use wire center boundaries and thus they are unable to tell us how many customers or lines they are serving in each (Qwest) wire center." [Rowell Direct, p. 25] However, that doesn't preclude compiling Cox data that has been reconciled to the Qwest wire center boundaries. If an extreme level of precision were needed, it would only be necessary to obtain the street addresses of each of Cox's customers (or a random sample of those customers), and then to locate these addresses relative to the wire center boundaries. While this may sound difficult, it can be accomplished using highly computerized processes, similar to the methods that are used target direct mail campaigns at specific neighborhoods or sub-markets. On a more simplified basis, roughly the same results can be achieved by relying on ported phone number data. Many customers retain

the phone number that was issued by Qwest prior to the time they become a Cox customer. Since in most cases these phone numbers can easily be mapped directly back to the Qwest serving wire center, it is a relatively simple matter to estimate the number of Cox lines that are serving customers that are located within the geographic areas associated with each of Qwest's wire centers. Finally, I would note that Qwest's wire centers are also directly relevant to CLECs who rely on unbundled loops provided by Qwest, since they will generally connect their facilities to these loops at the associated Qwest wire center.

At some point in the expansion/entry process, a CLEC will need to analyze individual Qwest wire centers, in evaluating the cost of collocation, the cost of renting Qwest loops versus installing their own facilities, the cost of originating and terminating traffic to Qwest customers in that wire center and so forth. Thus, Qwest wire centers are relevant to all competing carriers, including those who primarily rely on their own facilities.

During each step of the entry and network expansion process, the CLEC needs to consider the fixed and variable costs of the entry decision in question, taking into account the fixed cost of collocation and the other investments involved in that entry option. The CLEC will not likely take the next step unless it has a reasonable expectation of recovering its fixed costs over the life cycle of the investment in question. The CLEC might incur collocation costs, costs for various pieces of equipment to be installed in the collocation area, and additional costs required to serve its customers. Throughout this series of decisions, the Qwest wire centers are relevant to their decision making process (although, admittedly, these wire centers are much less important for a cable television carrier like Cox). In general, CLEC entry is not an all-or-nothing decision that occurs exclusively at the county, city, town, or exchange level.

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Rather, it is typically a sequential process that evolves and changes over time, with many of the key entry decisions occurring at the wire center level or at an even more granular level.

Additionally, larger geographic areas such as zip codes (as proposed by Staff) or towns and exchanges (as proposed by Cox) are generally more heterogeneous than individual wire centers. By this I mean that geographic and customer characteristics will vary more widely across a larger area than a smaller one. A town many encompass vastly different neighborhoods with widely varying economic and demographic conditions. Although a town or an exchange may possess a substantial urban component, it is also likely to possess a mixture of both urban and suburban markets. Furthermore, in a state like Arizona, which includes many rural areas, an exchange may include lightly populated rural areas beyond the suburbs. Because competitive conditions are likely to vary as the geographic area studied expands, declaring a service to be competitive (or not) within a relatively large, relatively heterogeneous area has the potential for significant error. Accordingly, I recommend developing the competitive analysis on a more granular basis, focusing on relatively small geographic areas, (like individual wire centers).

A.

Q. How do you respond to the concerns expressed by Staff and Cox witnesses that customers aren't familiar with wire center boundaries?

First, it isn't necessary for customers to have familiarity with the geographic boundaries used in administering the price cap plan for the Commission to do its work. Stated another way, once the Commission determines where pricing flexibility will be granted, it will be sufficient to provide affected customers with notice of the fact that Qwest's rates are no longer subject to

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stringent regulation, and to make sure they are informed of the existence of competitive alternatives, in the event Qwest uses its new-found freedom to raise its prices.

Second, if the Commission wants to align its basket assignments with geographic boundaries that are already familiar to customers, it can do so in the final stages of its analysis. If this alignment occurs as a final step, the benefits of using granular wire center data can be retained to a high degree. The Commission can start with a review of HHI and other data for individual wire centers; after determining which wire centers are experiencing the most intense levels of competition, the Commission can look more closely at these specific areas, to determine what existing boundaries (e.g. zip codes) are most closely aligned with, or come closest to encompassing, the wire center areas in question. Thus, for example, if the Commission concludes that competition in the Phoenix main wire center is intense enough to justify additional pricing freedom, it could implement this decision by reclassifying the appropriate services within certain zip codes.

I prepared Maps 1 and 2 to illustrate this suggestion. Map 1 centers on the Phoenix - Main wire center and shows the zip codes that overlap the area served by this wire center. As shown on Map 1, zip codes 85003, 85004 and 85007 are almost entirely within the Phoenix - Main wire center boundary. A substantial portion of one other zip code (85006) also falls within the area served by this wire center.

Map 2 shows the Tucson - Main wire centers with the zip codes overlaid. As shown, zip codes 85701, 85709, and 85721 lie entirely within the area served by this wire center. In addition, zip code 85713 is largely within the Tucson - Main wire center.

1	Q.	Would you please outline other intervenor positions as they relate to adjusting access
2		rates?
3	Α.	Yes. MCI, DoD and Staff have all sought intrastate access rate reductions in these
4		proceedings. MCI witness Price enumerates his proposal:
5 6 7 8 9 10		For all the reasons set forth in my testimony, MCI respectfully urges the Commission to reduce Qwest's Arizona intrastate switched access charges to levels approximating economic cost. If, however, the Commission is unwilling to take such action at this time, at a minimum, it should require Qwest's intrastate switched access rates to mirror its interstate switched access rates. [Price Direct, p. 3]
12		Interstate switched access fates. [Fire Direct, p. 3]
13		DoD witness Lee enumerates his proposal:
14 15 16 17 18 19 20 21 22 23 24 25		If and when the FCC adopts a change to intercarrier compensation, it will undoubtedly result in a further reduction of interstate access rates. There is nothing to be gained by a further delay in bringing intrastate access rates at least to current interstate rate levels. On the other hand, I agree with Qwest witness Ziegler that this change should be on a revenue neutral basis, with switched access rate reductions offset by an appropriate end-user charge. To minimize rate shock, I recommend that this change be accomplished in two steps, with half of the difference in rates effective upon implementation of the revised price cap plan and full parity a year later. [Lee Direct, p. 11]
26		Finally, Staff witness Regan enumerates his proposal:
27 28 29 30 31		I recommend that Qwest's intrastate switched access rates be reduced by 25% This reduction will effectively bring Qwest to "parity" with the Qwest interstate switched access rates (when the interstate EUCL charges are factored into the calculation of the interstate switched
32		access rates), and will bring the Arizona intrastate switched access

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1 rates in line with the average intrastate switched access charges of 2 Owest across its 14 state service territory. [Regan direct, p. 41] 3 How do these recommendations compare to what you recommended for access in your 4 Q. 5 direct testimony? Unlike Cox, DoD and Staff, I have not recommended a specific level of access rate reductions, 6 Α. 7 but I did express some concerns about the potential impact of such reductions: 8 9 Switched access service is an important source of revenues that has historically been used to help pay for the costs of providing Universal 10 Service. If these rates are greatly reduced, as some parties are 11 12 advocating, there will be increased pressure to replace this revenue stream with an alternative source of funding, such as higher local 13 exchange rates. This type of "rate rebalancing," as it has been called, 14 may endanger the universal service goal, particularly if it is implemented 15 in an extreme manner. [Johnson Direct, p. 36] 16 17 18 While I don't necessarily agree with the Staff proposal – a one-time access rate reduction of 19 \$25 million – it is not as extreme as MCI's proposal, which could lead to drastic dislocations (depending upon how the concept of "economic cost" is interpreted). While DoD's proposal is 20 21 also somewhat extreme, at least they are proposing that the resulting rate changes be phased in 22 gradually. In this regard, I would like to take this opportunity to reiterate a cautionary note I 23 included in my direct testimony. 24 25 In evaluating this conflicting advice, it would be appropriate to err in the direction of ensuring that the "price of entry" onto the telephone 26 network remains at attractively low levels-thereby helping to maintain 27 very high penetration rates. That is not to say that the Commission 28 should be unwilling to deviate from the status quo, or that it should 29

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refuse to consider any reductions to access charges for fear of the consequences. However, the Commission should place a very high burden of proof on parties that are urging extreme changes to cost recovery patterns which have proven so successful for so many years. [Id. p.39]

Staff witness Abinah indicates that Staff would allow Qwest to recover its access charge reduction through an increase to the "Basket 3 Revenue Cap." Recall that I don't believe a "Basket 3 Revenue Cap" is necessary. For the same reasons I gave earlier, I doubt Qwest would have much success if it attempts to increase rates in Basket 3 in an effort to recoup the revenues lost from the 25% reduction in switched access rates. To that extent, the Staff proposal is not very attractive from Qwest's perspective. MCI and DoD, on the other hand, provide no indication how Qwest would be permitted to recover its access charge reduction under their proposals. Hence, the potential for drastically higher basic local exchange rates, and in turn the risks to universal service, are much greater under the MCI and DoD proposals.

I offered a much less risky means of reducing access in my direct testimony:

While I question the logic or merits of proposals to greatly reduce switched access rates and increase basic exchange rates, under RUCO's recommended Plan the Company will be allowed to gradually rebalance these rates if it so chooses. RUCO's recommended Plan does not include any constraint on annual reductions in switched access rates, so regardless of where these rates are placed within the recommended Plan, Qwest can reduce these rates as rapidly as it chooses. The extent to which it can offset these reductions with increases in other rates will depend the degree of competition facing switched access services, and thus which basket it is placed into. For instance, nothing in the recommended Plan would prevent the Company

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from reducing its intrastate switched access rates to levels comparable to those charged in the federal jurisdiction, if for some reason it felt this was desirable. [Id., p. 194]

Because of the various price caps included in RUCO's recommended Plan, the Commission can be confident that any rebalancing that occurs between switched access and other rates will be reasonably gradual, and that offsetting increases in other rates will not be extreme.

Finally, I would again call attention to the portion of my recommendations where I endorsed the use of a state Universal Service Fund (USF) as an appropriate long term mechanism for dealing with geographic cost disparities. To the extent Qwest is experiencing insufficient gross profit margins in high cost, rural areas, I recommend moving away from the implicit revenue support that is provided by switched access, to a system that would provide competitively neutral, explicit, targeted support for high cost areas using a state USF. Recall I proposed the following in my direct testimony:

If the Commission wants to ensure that rural areas (including many of the exchanges classified as UNE Zone 3) generate revenues which are sufficient to cover the relatively high cost of serving these areas, this should not be accomplished by giving Qwest the freedom to drastically increase rural rates. To the contrary, if the Commission is convinced that the existing system of implicit support is not sustainable or acceptable, it would be more appropriate to revamp the Arizona universal service fund that would provide an appropriate mechanism for dealing with these cost disparities. [Id., p. 65]

Modifying the Arizona USF to more closely resemble the Kansas USF would be a much better

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solution to the "high cost problem" than Qwest's AUSF proposals and the other intervenors'

access proposals. In this regard, it is worth noting that the Kansas Corporation Commission

used this mechanism to reduce intrastate access charges to levels rough parity with interstate

access charges, and that high cost support is available on a non-discriminatory basis to all

qualified carriers serving customers in rural areas, including small and large ILECs (including

SBC) as well as CLECs.

7

8

- Q. Does this complete your surrebuttal testimony, which was prefiled on January 12,
- 9 2005?
- 10 A. Yes, it does.

1			PROPRIETARY EXHIBIT 1
2			for the
3			SUPPLEMENTAL TESTIMONY
4 -			OF BEN JOHNSON, PH.D.
5			On Behalf of
6			THE STATE OF ARIZONA
7			RESIDENTIAL UTILITY CONSUMER OFFICE
8			Before the
9			ARIZONA CORPORATION COMMISSION
10			
11			Docket No. T-01051B-03-0454
12			Docket No. T-00000D-00-0672
13			
14	Note 1 · M	fultiple pro	oprietary notes on the same line are noted by a, b, c, etc.
15	Note 2: Pi	ropnetary ta	ables in their entirety will follow this list.
16			
17-	<u>Page</u>	Line(s)	Proprietary Information
18	22	6	
19	22	7	
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Vire Center	Market Share	4-firm Concentration Ratio	ННІ		Recommende Bask
PHOENIX-MAIN					Tot
UCSON-MAIN					Hig
PHOENIX-BETHANY WES	Т				Modera
PHOENIX-SOUTHEAST					Modera
PHOENIX-FOOTHILLS					Modera
SUNRISE					Modera
LOWING-WELLS					Modera
TUCSON SE	=				Modera
CASA GRANDE					Modera
PHOENIX-PECOS	***				Modera
COLDWATER					Modera
PHOENIX-NORTH	· ·		-	1 12	Modera
SHEA				1,31	Modera
EMPE-MCCLINTOCK		-			Modera
HOENIX-MARYVALE					Modera
SILBERT					Modera
HOENIX-MID RIVERS			•		Modera
HOENIX-PEORIA					Modera
HANDLER-WEST					Modera
HOENIX-EAST		-		-	Modera
UMA-MAIN					Modera
RAYCROFT		. – .			Modera
UMA-SOUTHEAST					Modera
INCON					Modera
UPERSTITION-WEST					Modera
HANDLER-MAIN					Modera
TCHFIELD PARK					Modera
EARDSLEY					Modera
HOENIX-NORTHWEST					Modera
LENDALE-MAIN					Modera
HANDLER-SOUTH					Modera
UCSON-NORTH					Modera
COTTSDALE					Modera
HOENIX-WEST					Modera
HOENIX-CACTUS					Modera
EMPE-MAIN					Modera
SUPERSTITION-MAIN					Modera
MESA-MAIN					Modera
PHOENIX-GREENWAY					Modera
CORTARO					Modera
TUCSON-SOUTH					Modera

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		4-firm		·
	N 1 . Cl	Concentration		Recommende
Wire Center	Market Share	Ratio) HHI	Bask
CATALINA				Modera
TUCSON-EAST				Modera
DEER VALLEY NORTH				Modera
PHOENIX-SOUTH				Modera
AGE				Modera
RESCOTT MAIN				Modera
ORONADO				Modera
LAGSTAFF EAST				Modera
PINNACLE PEAK				Modera
HUNDERBIRD				Modera
PHOENIX-NORTHEAST				Modera
OLLESON				Modera
ANQUE VERDE				Modera
HOENIX-SUNNYSLOPE				Modera
LOBE				Modera
LAGSTAFF MAIN				Modera
UMA FORTUNA	-		- '	Modera
REEN VALLEY	+ -			Modera Modera
UPERSTITION-EAST	-			Modera
ORT MCDOWELL				Modera
AVE CREEK OTTONWOOD-SOUTH	-			Modera
IERRA VISTA-MN				Modera
IIGLEY				Modera
AYSON				Modera
RESCOTT EAST				Modera
OGALES			, T. A.	Modera
EDONA-MAIN				Modera
GLY QUEEN CREEK				Modera
EDONA-SOUTH				Modera
OGALES MIDWAY				Modera
UCSON WEST				Modera
HINO VALLEY				Modera
AIL SOUTH				Modera
IEW RIVER				Modera
PHOENIX-LAVEEN				Modera
UCSON SOUTHWEST				Modera
COTTONWOOD-MAIN				Modera
MARICOPA				Modera
HUMBOLDT				Modera
CIRCLE CITY				Modera

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			4-firm		4	
			Concentration			Recommende
Vire Center		Market Share	Ratio		нні	Bask
TANEIELD						Modera
TANFIELD						Modera
VINSLOW						Modera
VINTERSBURG	# .					Modera
AN MANUEL						Modera
LOY						Modera
OOLIDGE						Modera
IARANA				*		Modera
IUNDS PARK				-		Modera
IERRA VISTA NO						Modera
UPERIOR					-	Modera
/ILLCOX						Modera
UBAC						
UCKEYE						Modera
ENSON			12			Modera
HITE TANKS						Modera
IAMI						Modera
UDLEYVILLE			¥			Modera
SEPH CITY			_			Moder
ORENCE						Moder
OMBSTONE			-n			Modera
ARNELL						Moder:
MA						Moder
LACK CANYON						Moder
OUGLAS						Moder
ALOMINAS						Moder
AMP VERDE			-			Moder
AIL NORTH						Moder
OMERTON						Moder
RACLE						Moder
/ELLTON						Moder
AFFORD						Moder
AINT DAVID						Moder
ONTO CREEK						Moder
_AGSTAFF SOUTH						Moder
IERRA VISTA SO						Moder
IO VERDE						Moder
ISBEE						Moder
IAMMOTH						Moder
VILLIAMS						Moder
TILLIFUITO						Moder
PINE						WIUGUI

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		4-firm oncentration		Recommended
Wire Center	Market Share	Ratio	нні	Basket
KEARNY				Moderate
ASHFORK				Moderate
WICKENBURG	e e			Moderate
GRAND CANYON				Moderate
HAYDEN				Moderate
PATOGONIA ELGIN				Moderate
PATAGONIA				Moderate
MOUNT LEMMON				Moderate
WHITLOW	= -			Moderate

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HUMBOLDT PHOENIX-MAIN PHOENIX-FOOTHILLS PHOENIX-PECOS SUPERSTITION-MAIN TUCSON-MAIN TUCSON SOUTHWEST CASA GRANDE HIGLEY HGLY QUEEN CREEK MUNDS PARK SEDONA-MAIN SIERRA VISTA SO TANQUE VERDE VAIL SOUTH SUNRISE ASHFORK BUCKEYE BISBEE BLACK CANYON BENSON SAINT DAVID BEARDSLEY CHANDLER-MAIN CHANDLER-WEST CHINO VALLEY					Tota High or Tota High or Tota High or Tota High High High High Moderate or High
PHOENIX-FOOTHILLS PHOENIX-PECOS SUPERSTITION-MAIN TUCSON-MAIN TUCSON SOUTHWEST CASA GRANDE HIGLEY HGLY QUEEN CREEK MUNDS PARK SEDONA-MAIN SIERRA VISTA SO TANQUE VERDE VAIL SOUTH SUNRISE ASHFORK BUCKEYE BISBEE BLACK CANYON BENSON SAINT DAVID BEARDSLEY CHANDLER-MAIN CHANDLER-WEST					Hig Hig Hig Hig Moderate or Hig Moderate or Hig
PHOENIX-PECOS SUPERSTITION-MAIN TUCSON-MAIN TUCSON SOUTHWEST CASA GRANDE HIGLEY HGLY QUEEN CREEK MUNDS PARK SEDONA-MAIN SIERRA VISTA SO TANQUE VERDE VAIL SOUTH SUNRISE ASHFORK BUCKEYE BISBEE BLACK CANYON BENSON SAINT DAVID BEARDSLEY CHANDLER-MAIN CHANDLER-SOUTH CHANDLER-WEST					Hig Hig Hig Hig Moderate or Hig Moderate or Hig
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TUCSON SOUTHWEST CASA GRANDE HIGLEY HGLY QUEEN CREEK MUNDS PARK SEDONA-MAIN SIERRA VISTA SO TANQUE VERDE VAIL SOUTH SUNRISE ASHFORK BUCKEYE BISBEE BLACK CANYON BENSON BAINT DAVID BEARDSLEY CHANDLER-MAIN CHANDLER-SOUTH CHANDLER-WEST					Moderate or Hig Moderate or Hig
CASA GRANDE HIGLEY HIGLEY HIGLY QUEEN CREEK MUNDS PARK SEDONA-MAIN SIERRA VISTA SO FANQUE VERDE VAIL SOUTH SUNRISE ASHFORK BUCKEYE BISBEE BLACK CANYON BENSON BAINT DAVID BEARDSLEY CHANDLER-MAIN CHANDLER-SOUTH CHANDLER-WEST					Moderate or Hig Moderate or Hig
HIGLEY HGLEY QUEEN CREEK MUNDS PARK SEDONA-MAIN SIERRA VISTA SO FANQUE VERDE VAIL SOUTH SUNRISE ASHFORK BUCKEYE BISBEE BLACK CANYON BENSON SAINT DAVID BEARDSLEY CHANDLER-MAIN CHANDLER-SOUTH CHANDLER-WEST					Moderate or Hig Moderate
HGLY QUEEN CREEK MUNDS PARK SEDONA-MAIN SIERRA VISTA SO TANQUE VERDE VAIL SOUTH SUNRISE ASHFORK BUCKEYE BISBEE BLACK CANYON BENSON SAINT DAVID BEARDSLEY CHANDLER-MAIN CHANDLER-SOUTH CHANDLER-WEST					Moderate or Hig Moderate or Hig Moderate or Hig Moderate or Hig Moderate or Hig Moderate or Hig
MUNDS PARK SEDONA-MAIN SIERRA VISTA SO FANQUE VERDE VAIL SOUTH SUNRISE ASHFORK BUCKEYE BISBEE BLACK CANYON BENSON SAINT DAVID BEARDSLEY CHANDLER-MAIN CHANDLER-WEST					Moderate or Hig Moderate or Hig Moderate or Hig Moderate or Hig Moderate or Hig Moderate
SEDONA-MAIN SIERRA VISTA SO FANQUE VERDE VAIL SOUTH SUNRISE ASHFORK SUCKEYE BISBEE BLACK CANYON BENSON SAINT DAVID BEARDSLEY CHANDLER-MAIN CHANDLER-SOUTH CHANDLER-WEST					Moderate or Hig Moderate or Hig Moderate or Hig Moderate or Hig Moderate
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SUNRISE ASHFORK BUCKEYE BISBEE BLACK CANYON BENSON BAINT DAVID BEARDSLEY CHANDLER-MAIN CHANDLER-WEST					Modera
ASHFORK BUCKEYE BISBEE BLACK CANYON BENSON BAINT DAVID BEARDSLEY CHANDLER-MAIN CHANDLER-WEST					
BUCKEYE BISBEE BLACK CANYON BENSON BAINT DAVID BEARDSLEY CHANDLER-MAIN CHANDLER-WEST					Modera
BISBEE BLACK CANYON BENSON BAINT DAVID BEARDSLEY CHANDLER-MAIN CHANDLER-SOUTH CHANDLER-WEST				-	Modera
BLACK CANYON BENSON BAINT DAVID BEARDSLEY CHANDLER-MAIN CHANDLER-SOUTH CHANDLER-WEST					Modera
BENSON SAINT DAVID BEARDSLEY CHANDLER-MAIN CHANDLER-SOUTH CHANDLER-WEST	,**	•		-	Modera
SAINT DAVID BEARDSLEY CHANDLER-MAIN CHANDLER-SOUTH CHANDLER-WEST					- Modera
BEARDSLEY CHANDLER-MAIN CHANDLER-SOUTH CHANDLER-WEST	•	-			Modera
CHANDLER-MAIN CHANDLER-SOUTH CHANDLER-WEST					Modera
CHANDLER-SOUTH CHANDLER-WEST					Modera
CHANDLER-WEST					Modera
					Modera
CHINO VALLEY				-	Modera
					Modera
COOLIDGE					Modera
AMP VERDE					Modera
IRCLE CITY					Modera
ORONADO					Modera
OTTONWOOD-MAIN					Modera
COTTONWOOD-SOUTH					Modera
CAVE CREEK					Modera
OUDLEYVILLE					Modera
OUGLAS					Modera
DEER VALLEY NORTH					Modera
LOY					Modera
LAGSTAFF EAST					Modera
FLAGSTAFF MAIN FLAGSTAFF SOUTH					Modera Modera

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Business Local Exchange Service

Wire Center	Market Share	4-firm Concentration Ratio	нні	Recommended Baske
LORENCE				Moderate
FORT MCDOWELL				Moderate
RIO VERDE				Moderate
COLDWATER				Moderate
GILA BEND				Moderate
GLENDALE-MAIN				Moderate
				Moderate
GLOBE			= 1 1 1 1	Moderate
GREEN VALLEY		-		Moderate
GRAND CANYON				Moderate
HAYDEN				Moderate
JOSEPH CITY				Moderate
KEARNY		-		Moderate
LITCHFIELD PARK				Moderate
MARANA				Moderate
GILBERT				Moderate
MESA-MAIN		•		Moderate
MIAMI		-		Moderate
MAMMOTH				Moderat
MARICOPA				Moderat
NOGALES				Moderat
NOGALES MIDWAY				Moderat
NEW RIVER				Moderat
ORACLE	\$			Moderat
PAGE				Moderat
PHOENIX-BETHANY WE	:51			Moderat
PHOENIX-CACTUS				
PHOENIX-EAST				Moderat
PHOENIX-GREENWAY				Moderat
PHOENIX-LAVEEN				Moderat
PHOENIX-MID RIVERS				Moderat
PHOENIX-MARYVALE				Moderat
PHOENIX-NORTHEAST			•	Moderat
PHOENIX-NORTH	• •			Moderat
PHOENIX-NORTHWEST	•			Moderat
PHOENIX-PEORIA				Moderat
PHOENIX-SOUTHEAST				Moderat
PHOENIX-SOUTH				Moderat
PHOENIX-SUNNYSLOPI	E ·			Modera
PHOENIX-WEST				Modera
PIMA				Modera
PINE				Modera

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Wire Center	Market		4-firm centration Ratio	ННІ		Recommended Basket
PALOMINAS						Moderate
PRESCOTT EAST						Moderate
PRESCOTT MAIN	•					Moderate
PINNACLE PEAK						Moderate
PATOGONIA ELGIN						Moderate
PATAGONIA						Moderate
PAYSON						Moderate
SCOTTSDALE		_	-			Moderate
SHEA			44			Moderate
THUNDERBIRD					17	Moderate
SEDONA-SOUTH			-	-		Moderate
SAFFORD				-	· : .	Moderate
SOMERTON					8.3	Moderate
SAN MANUEL						Moderate
SUPERIOR						Moderate
SUPERSTITION-EAST						Moderate
SUPERSTITION-WEST						Moderate
SIERRA VISTA-MN						Moderate
SIERRA VISTA NO			~			Moderate
STANFIELD						Moderate
CATALINA					-	Moderate
CORTARO						Moderate
CRAYCROFT						Moderate
TUCSON-EAST						Moderate
FLOWING-WELLS						Moderate
MOUNT LEMMON						Moderate
TUCSON-NORTH						Moderate
RINCON						Moderate
TUCSON SE						Moderate
TUCSON-SOUTH						Moderate
TUCSON WEST			-			Moderate
TEMPE-MAIN						Moderate
TEMPE-MCCLINTOCK						Moderate
TOLLESON						Moderate
TOMBSTONE						Moderate
TONTO CREEK						Moderate
TUBAC						Moderate
VAIL NORTH						Moderate
WICKENBURG						Moderate
WHITE TANKS WHITLOW						Moderate Moderate

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Wire Center	Market Share	4-firm Concentration Ratio	нні	Recommended Basket
WILLCOX				Moderate
WILLIAMS				Moderate
WELLTON	ø			Moderate
WINTERSBURG				Moderate
WINSLOW				Moderate
YARNELL				Moderate
YUMA FORTUNA				Moderate
YUMA-MAIN				Moderate
YUMA-SOUTHEAST				Moderate



